Amendments to the claims:

Cancel claims 2, 3, 6, 9-11, 15, 16, 19, 20 and 22-28.

1. (Currently Amended) A magnetic read head comprising:

a current perpendicular to the planes (CPP) sensor;

the CPP sensor having a top cap layer structure; and

the cap layer structure being composed of a first layer of tantalum (Ta) and a second layer of ruthenium (Ru). ~~or rhodium (Rh).~~

2.- 3. (Canceled)

4. (Original) A magnetic read head as claimed in claim 1 wherein the CPP sensor further comprises:

a ferromagnetic pinned layer structure;

a ferromagnetic free layer structure;

a nonmagnetic spacer layer located between the pinned layer structure and the free layer structure.

5. (Original) A magnetic read head as claimed in claim 4 further comprising:

ferromagnetic first and second shield layers;

the CPP sensor being located between the first and second shield layers; and

the first and second shield layers serving as first and second leads for conducting a current through the CPP sensor in a direction perpendicular to major thin film planes of the CPP sensor.

6. (Canceled)

7. (Currently Amended) A magnetic read head as claimed in claim [[6]] 5 wherein the free layer structure is located between the spacer layer and the cap layer structure.

8. (Currently Amended) A magnetic read head as claimed in claim [[6]] 5 wherein the pinned layer structure is located between the spacer layer and the cap layer structure.

9.- 11. (Canceled)

12. (Currently Amended) A magnetic head assembly comprising:

a write head;

a read head adjacent the write head;

the read head comprising:

a current perpendicular to the planes (CPP) sensor;

the CPP sensor having a top cap layer structure; and

the cap layer structure being composed of a first layer of tantalum (Ta) and a second layer of ruthenium (Ru). ~~or rhodium (Rh).~~

13. (Original) A magnetic head assembly as claimed in claim 12 wherein the CPP sensor further comprises:

a ferromagnetic pinned layer structure;

a ferromagnetic free layer structure;

a nonmagnetic spacer layer located between the pinned layer structure and the free layer structure.

14. (Original) A magnetic head assembly as claimed in claim 13 further comprising:

ferromagnetic first and second shield layers;

the CPP sensor being located between the first and second shield layers; and

the first and second shield layers serving as first and second leads for conducting a current through the CPP sensor in a direction perpendicular to major thin film planes of the CPP sensor.

15.- 16. (Canceled)

17. (Currently Amended) A magnetic disk drive comprising:

at least one magnetic head assembly that has a head surface;

the magnetic head assembly having a write head and a read head;

the read head including:

a current perpendicular to the planes (CPP) sensor;

the CPP sensor having a top cap layer structure; and

the cap layer structure being composed of a first layer of tantalum (Ta) and a second layer of ruthenium (Ru); ~~or rhodium (Rh);~~

ferromagnetic first and second shield layers; and

the CPP sensor being located between the first and second shield layers;

a housing;

a magnetic medium supported in the housing;

a support mounted in the housing for supporting the magnetic head assembly with said head surface facing the magnetic medium so that the magnetic head assembly is in a transducing relationship with the magnetic medium;

a motor for moving the magnetic medium; and

a processor connected to the magnetic head assembly and to the motor for exchanging signals with the magnetic head assembly and for controlling movement of the magnetic medium.

18. (Original) A magnetic disk drive as claimed in claim 17 wherein the CPP sensor further comprises:

a ferromagnetic pinned layer structure;

a ferromagnetic free layer structure;

a nonmagnetic spacer layer located between the pinned layer structure and the free layer structure.

19.- 20. (Canceled)

21. (Currently Amended) A magnetic read head comprising:

a current perpendicular to the planes (CPP) sensor;

the CPP sensor having a top cap layer structure which includes:

a first layer of tantalum (Ta) only;

a second layer of ~~ruthenium (Ru),~~ rhodium (Rh)~~; or gold (Au);~~ and

the first layer interfacing the second layer and being located between ~~and interfacing~~ a spacer layer and the second layer.

22.- 28. (Canceled)

Add new claims 29-32.

29. (New) A magnetic read head as claimed in claim 21 wherein the CPP sensor further comprises:

a ferromagnetic pinned layer structure;

a ferromagnetic free layer structure; and

the spacer layer being located between the pinned layer structure and the free layer structure.

30. (New) A magnetic read head as claimed in claim 29 further comprising:

ferromagnetic first and second shield layers;

the CPP sensor being located between the first and second shield layers; and

the first and second shield layers serving as first and second leads for conducting a current through the CPP sensor in a direction perpendicular to major thin film planes of the CPP sensor.

31. (New) A magnetic read head as claimed in claim 29 wherein the first layer also interfaces the free layer structure.

32. (New) A magnetic read head as claimed in claim 29 wherein the first layer also interfaces the pinned layer structure.